

A RECORD OF AGABUS SEMIVITTATUS LECONTE FROM CALIFORNIA

(Coleoptera:Dytiscidae)

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AGABUS SEMIVITTATUS LeConte

Agabus semivittatus LeConte, 1852. Ann. Lyceum Nat. Hist. New York, 5:204.*Agabus spilotus* LeConte, 1859. Smithson. Contrib. Knowl., 2 (Art. 6):5.*Agabus texanus* Sharp, 1882. Sci. Trans. Roy. Dublin Soc., (2) 2:505.

It seems to have escaped notice for a long time that the type of *Agabus semivittatus* LeConte was from California. So far as I know it had not been found again in California for over a hundred years, until Dr. John Belkin and party took a male and two females at China Ranch, Inyo County, on May 30, 1955. China Ranch is just south of Tecopa, near the San Bernardino County line. The species is not included in my key to those known from the state (1956:319-321).

LeConte's original description gives merely "Colorado" as the type locality. This actually refers to the Colorado Desert of California. In the introduction to his paper (1851:125) he wrote, "My collection was made in the following manner: . . . San Diego, in May, June and September; Vallecitas [now Vallecitos] and the Desert of the Colorado, in October and November; Colorado River, December and March; Valley of the Gila, in January and February." since he specified "Ad flumen Colorado" for many other cases in this paper, it is fair to presume that he meant the Colorado desert for *A. semivittatus*; he may have found it in some small source of water in what is now the Imperial Valley. It is interesting to note that the then dry bed of the present Salton Sea was not discovered and explored until 1853-54.

LeConte (1863:17) placed his *A. spilotus* (Fort Laramie [Wyoming]) as a variety of *A. semivittatus*, and Crotch (1873:417) made it a synonym; I have specimens compared with the types by Dr. P. J. Darlington, Jr. Fall (1922:10), in listing *A. texanus* Sharp as a probable synonym, wrote "Some examples, more especially those from Texas and the southwest are a little less evenly oval than the typical form of the species . . .", as if the typical form was not from the southwest. On the basis of 12 Texas and 34 Arizona specimens studied, I, too, doubt there is

any basis for a division of the species, but if a subspecies is named it will have to be from the eastern part of its range, since the three names already proposed are all for western material.

In addition to the localities given by Fall, I have seen specimens from UTAH: St. George. KANSAS: Douglas County; Onaga. SOUTH DAKOTA: Rapid City. OKLAHOMA: Wichita National Forest; McClain County; Norman. ARKANSAS: Bentonville. MISSOURI: St. Louis; Ranken; Columbia. MICHIGAN: South Haven; E. S. George Reserve, Livingston County. TENNESSEE: Elmwood. VIRGINIA: (state record only). PENNSYLVANIA: Bear Lake; Clarks Valley; Easton; Wind Gap. NEW JERSEY: Colonia; Phillipsburg; Princeton. NEW YORK: Chautauqua; Jones Beach; Ithaca; Long Beach; Meadowdale; N. Lebanon. MASSACHUSETTS: Framingham; Natick. QUEBEC: Como.

In my key to the California species (1956:319–321) *A. semivittatus* will trace to couplet 9, where it will not fit either choice, since the prosternal process is rather broad and flat, but not sharply acuminate, while there is only a partial row of punctures paralleling the lower posterior margin of the hind tibia. If put through the second choice it will run to couplet 15, where it fits the second part except that the elytral reticulation is as fine in the female as in the male. From there it could be traced to *A. approximatus* Fall, but is immediately distinguished by the dark epipleurae, broad, flat prosternal process, and sharply rectangular hind angles of the pronotum. The male of *A. semivittatus* has the anterior protarsal claw toothed near the base, and the aedeagus is simple apically, not bifid in profile.

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A STRIDULATORY MECHANISM IN ARHAPHE
CICINDELOIDES WALKER

(Hemiptera:Heteroptera:Pyrrhocoridae)

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Stridulation in the Heteroptera has received only limited attention during the long period that this taxon has been studied. The recent summary by Leston (1957) has provided a thorough review of the accumulated knowledge on the subject. As Leston states (*loc. cit.*, p. 370), only the Aradidae (Usinger, 1954) and the Pentatomorpha (Leston, 1954) have received recent treatment. When the general paucity of information is considered, it is perhaps unwise to draw sweeping conclusions based on such a small amount of information. This is particularly true in the face of conclusions reached by Usinger (*loc. cit.*, p. 543) in the Aradidae, in which he feels that stridulatory mechanisms have arisen independently at least five times within that family and are not of any fundamental phylogenetic significance. Investigation now in progress tends to support this idea in the Lygaeidae. That they may prove valuable in certain groups is demonstrated by Leston (1957:372), in which all of the genera of Cydnidae examined exhibited the same type of wing strigil. Thus, as with any character, its relative value must be determined for each group under consideration before broad generalizations can be made.

A structure of apparent stridulatory nature was observed in *Arhapse cicindeloides* Walker during the routine identification of a small collection of Heteroptera. The stationary portion, or